IMPORTANT—DO NOT DESTROY

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UNITED
FORGING PRESSES

PARTS LIST

UNITED ENGINEERING & FOUNDRY CO.
PITTSBURGH, PA.

UNITED FORGING PRESSES

PARTS LIST WITH INSTRUCTIONS FOR CARE AND MAINTENANCE

UNITED ENGINEERING & FOUNDRY CO.
PITTSBURGH, PA.

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IN presenting this pamphlet to owners of United Steam Hydraulic Forging Presses, to facilitate the ordering of repair or duplicate parts, we are furnishing drawings, photographs and data of parts of the press which we have heretofore been more or less reluctant to let out of our hands.

To safeguard against any promiscuous distribution, we are furnishing but one pamphlet to a customer, each pamphlet bearing the number of the press or presses which we have built for them.

One copy printed for each customer. Do not destroy or mutilate as we will be unable to furnish duplicate copies.

YOUR PRESS NUMBER_____

Instructions for Maintenance
—of—
Steam-Hydraulic Forging Presses
SINGLE FRAME TYPE
150 & 300 TONS CAPACITY

All parts of OPERATING MECHANISM to be oiled regularly with engine oil, to insure smooth easy operation without excessive wear.

The OIL PUMP must be kept well supplied with clean cylinder oil.

It is important that the WATER charged into the frame be clean and free from grit, with the addition as often as necessary of a quantity of suitable HYDRAULIC LUBRICANT, such as soluble oil, cutting compound or other soapy solution free from acid.

Special attention must be paid to the cleanliness and lubrication of the HYDRAULIC RAMS. Inattention to this matter will result in rapid destruction of the packing leathers. Care must be taken when removing or installing packings, not to injure the lower edge of the packing groove or the surface of the rams.

Lock Nuts on valve stems and adjustable rods should be kept tight. **Glands on steam valve spindles** must be tightened no more than necessary to prevent leakage.

The nuts on the HYDRAULIC VALVE SPINDLE must be 1/16" clear of the lever when the valve is seated.

Keep all keys, bolts and nuts tight.

Remember that care and attention save repairs and stoppages.

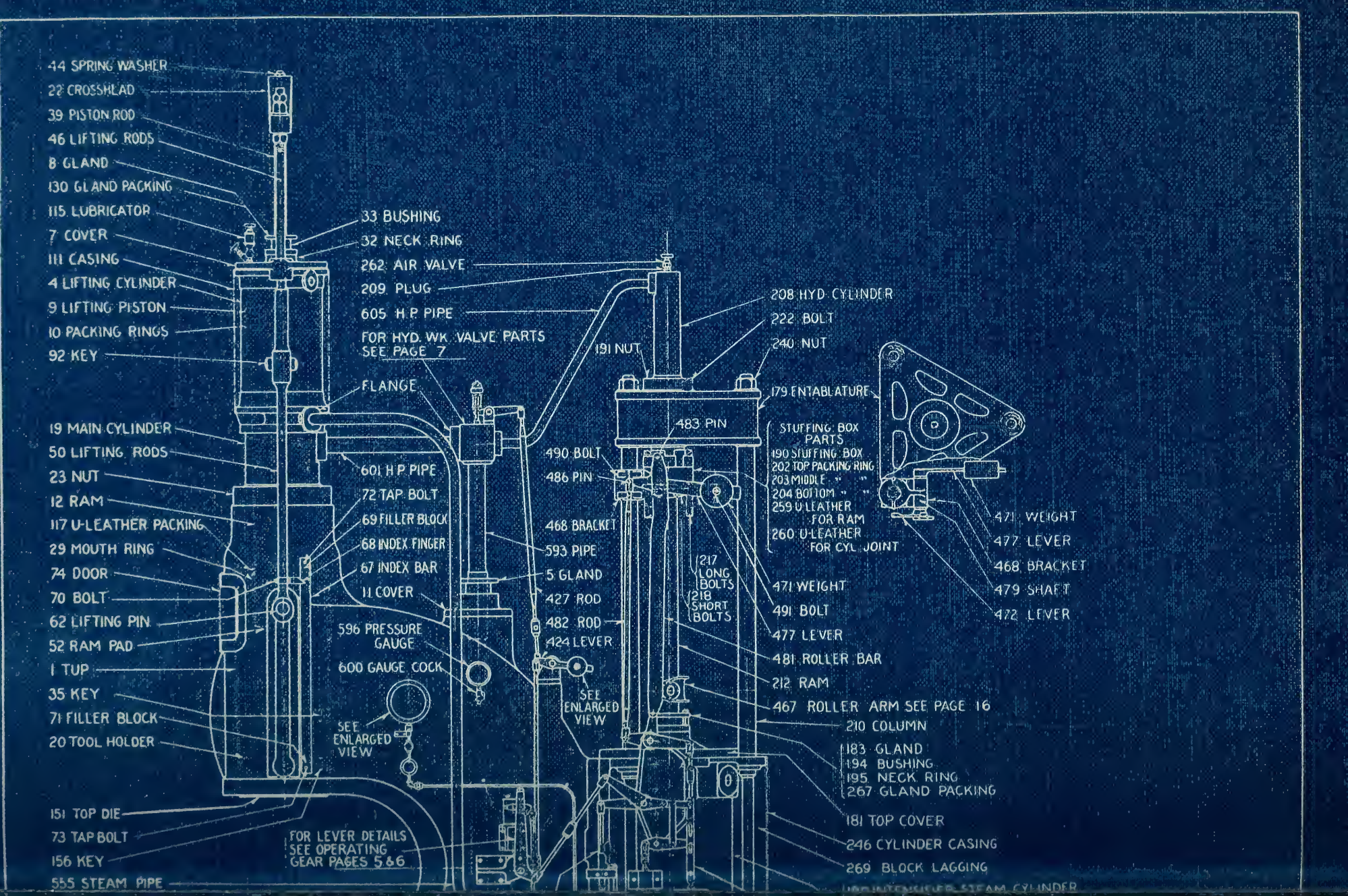
150 TON SINGLE FRAME PRESS

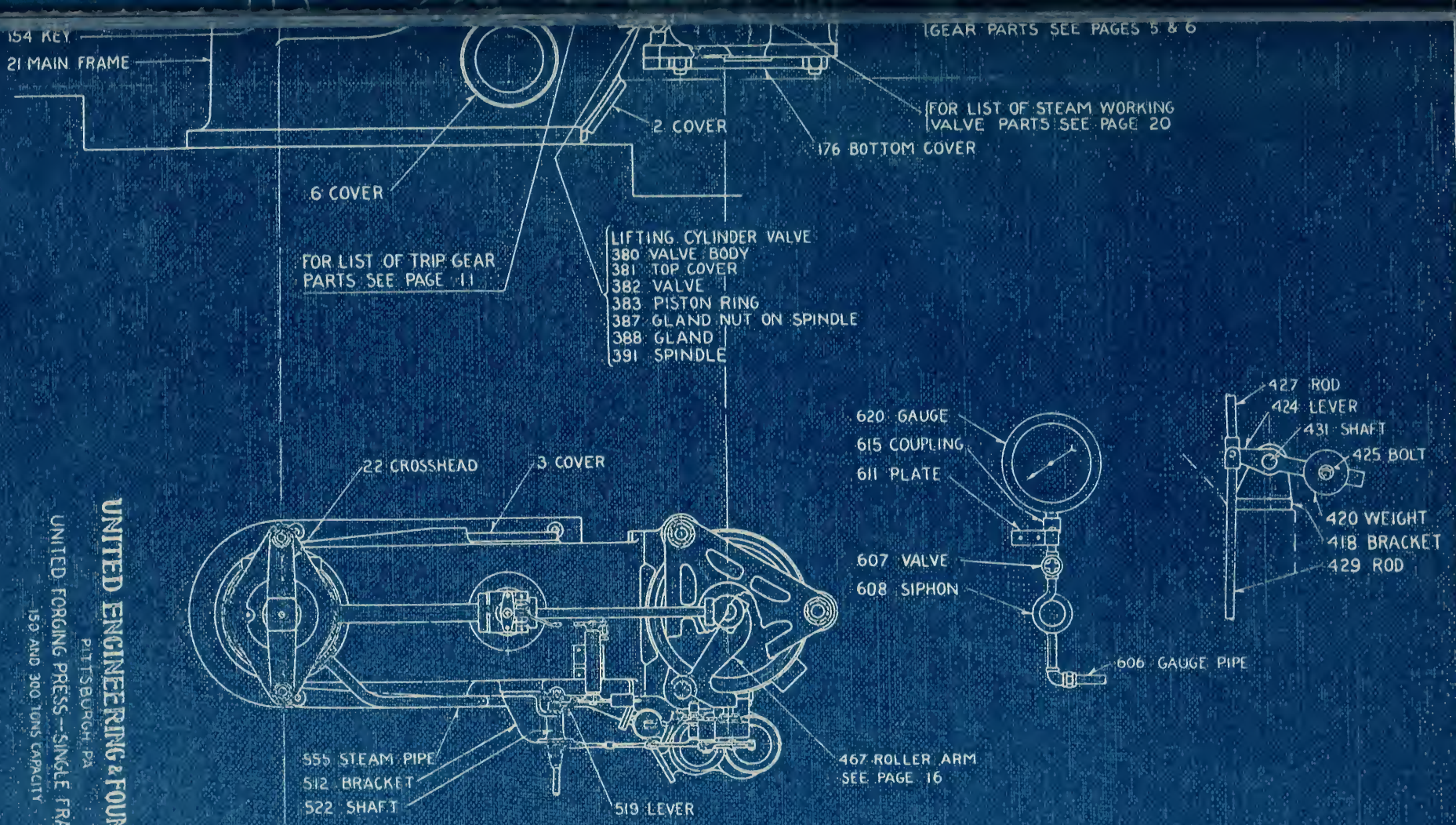
General Drawing .....Blue Print 1
Operating Gear.....page 5
Hydraulic Working Valve .....page 7
Trip Gear .....page 11
Roller Arm.....page 16
Steam Working Valve.....page 20

300 TON SINGLE FRAME PRESS

General Drawing .....Blue Print 1
Operating Gear .....page 6
Hydraulic Working Valve .....page 7
Trip Gear .....page 11
Roller Arm.....page 16
Steam Working Valve.....page 20

When ordering spare or repair parts, **do not neglect to give the press number for which parts are desired.** Press number on plate attached to hydraulic working valve.


44 SPRING WASHER
22 CROSSHEAD
39 PISTON ROD
46 LIFTING RODS
8 GLAND
130 GLAND PACKING
115 LUBRICATOR
7 COVER
111 CASING
4 LIFTING CYLINDER
9 LIFTING PISTON
10 PACKING RINGS
92 KEY
19 MAIN CYLINDER
50 LIFTING RODS
23 NUT
12 RAM
117 U-LEATHER PACKING
29 MOUTH RING
74 DOOR
70 BOLT
62 LIFTING PIN
52 RAM PAD
1 TUP
35 KEY
71 FILLER BLOCK
20 TOOL HOLDER
151 TOP DIE
73 TAP BOLT
156 KEY
555 STEAM PIPE
33 BUSHING
32 NECK RING
262 AIR VALVE
209 PLUG
605 H.P. PIPE
FOR HYD. WK. VALVE PARTS SEE PAGE 7
FLANGE
601 H.P. PIPE
72 TAP BOLT
69 FILLER BLOCK
68 INDEX FINGER
67 INDEX BAR
11 COVER
596 PRESSURE GAUGE
600 GAUGE COCK
SEE ENLARGED VIEW
FOR LEVER DETAILS SEE OPERATING GEAR PAGES 566
191 NUT
208 HYD. CYLINDER
222 BOLT
240 NUT
179 ENTABLATURE
483 PIN
490 BOLT
486 PIN
468 BRACKET
593 PIPE
5 GLAND
427 ROD
482 ROD
424 LEVER
SEE ENLARGED VIEW
217 LONG BOLTS
218 SHORT BOLTS
STUFFING BOX PARTS
190 STUFFING BOX
202 TOP PACKING RING
203 MIDDLE " "
204 BOTTOM " "
259 U-LEATHER FOR RAM
260 U-LEATHER FOR CYL. JOINT
471 WEIGHT
491 BOLT
477 LEVER
481 ROLLER BAR
212 RAM
467 ROLLER ARM SEE PAGE 16
210 COLUMN
183 GLAND
194 BUSHING
195 NECK RING
267 GLAND PACKING
181 TOP COVER
246 CYLINDER CASING
269 BLOCK LAGGING
471 WEIGHT
477 LEVER
468 BRACKET
479 SHAFT
472 LEVER

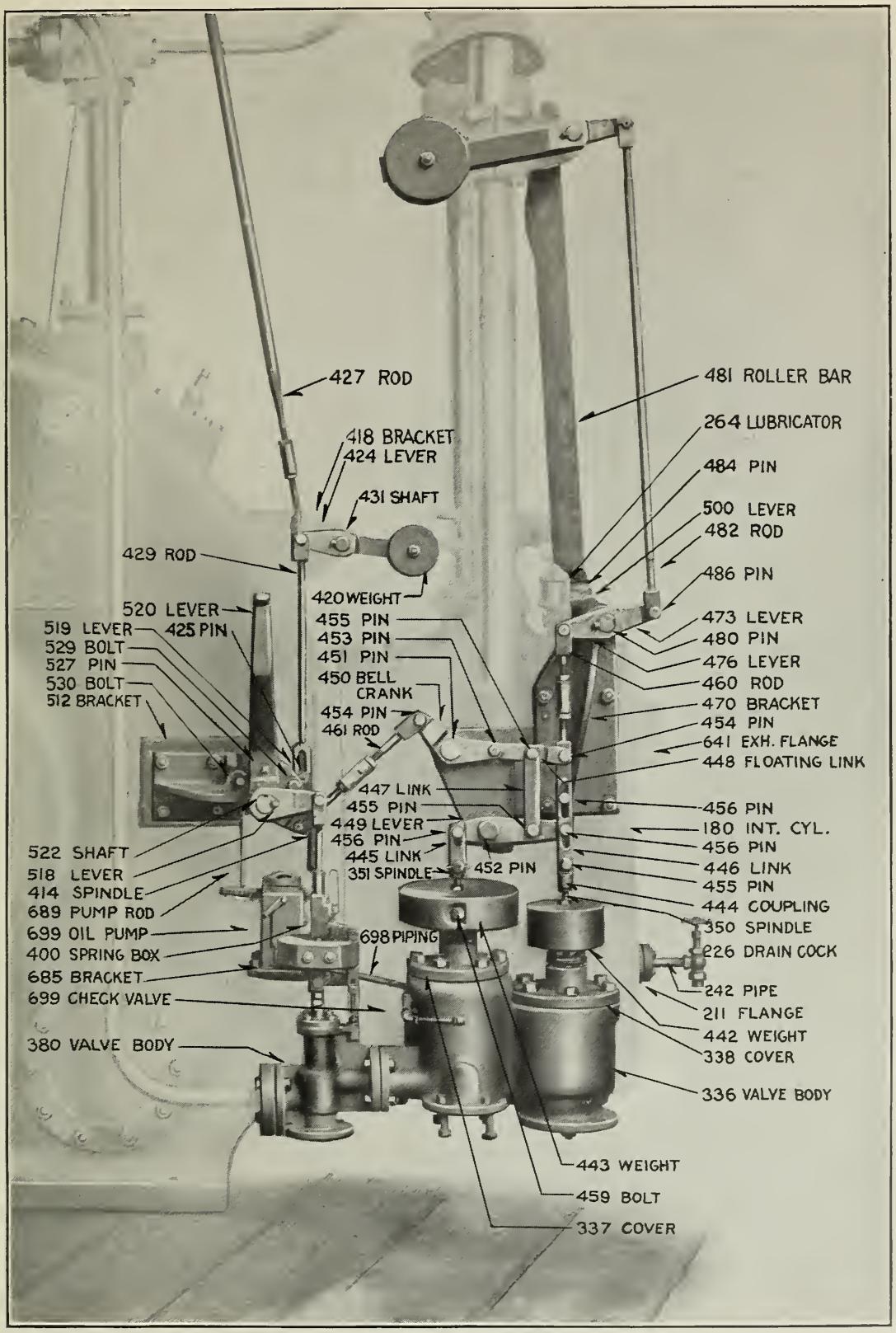


UNITED ENGINEERING & FOUNDRY CO.

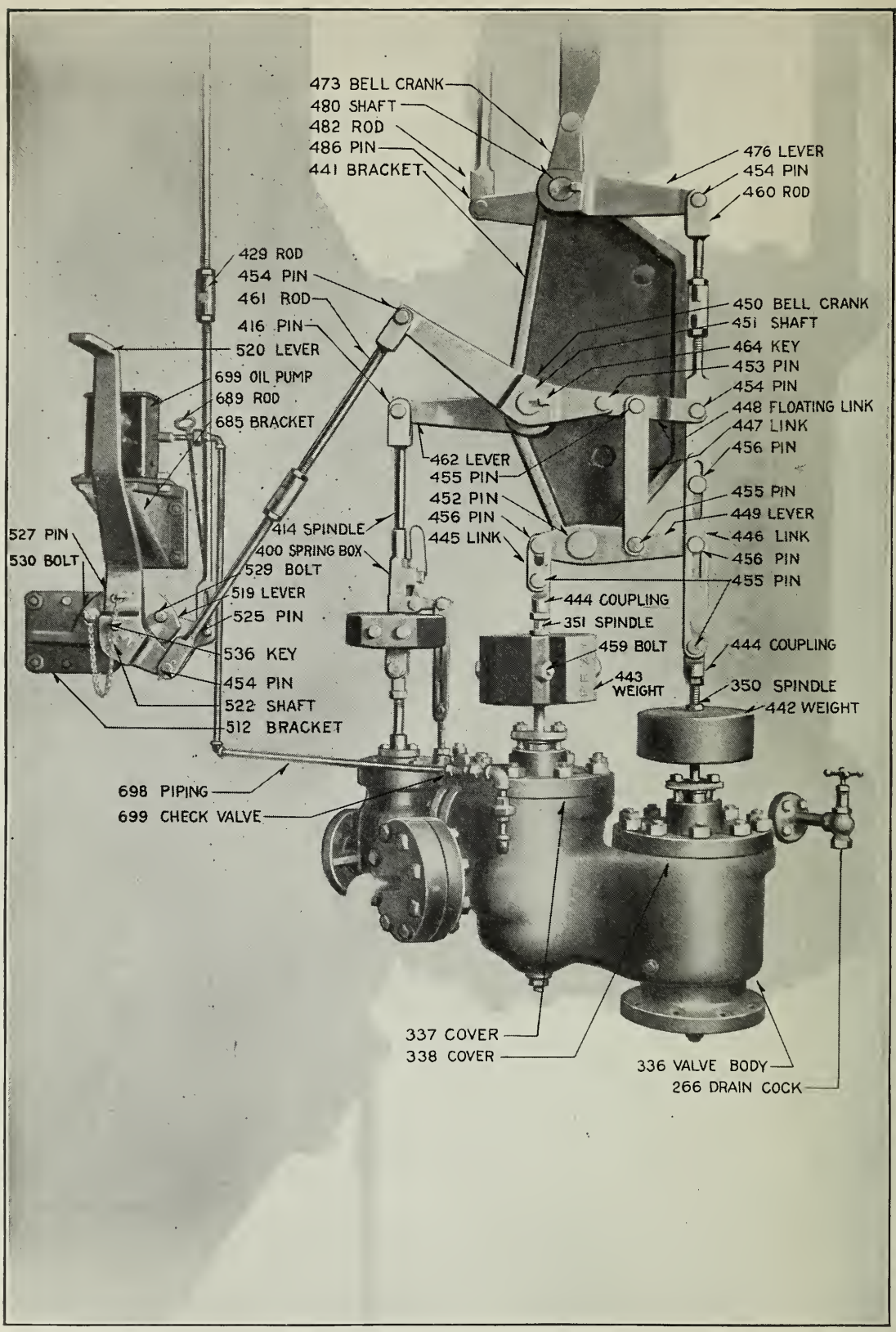
PITTSBURGH, PA

UNITED FORGING PRESS—SINGLE FRAME TYPE

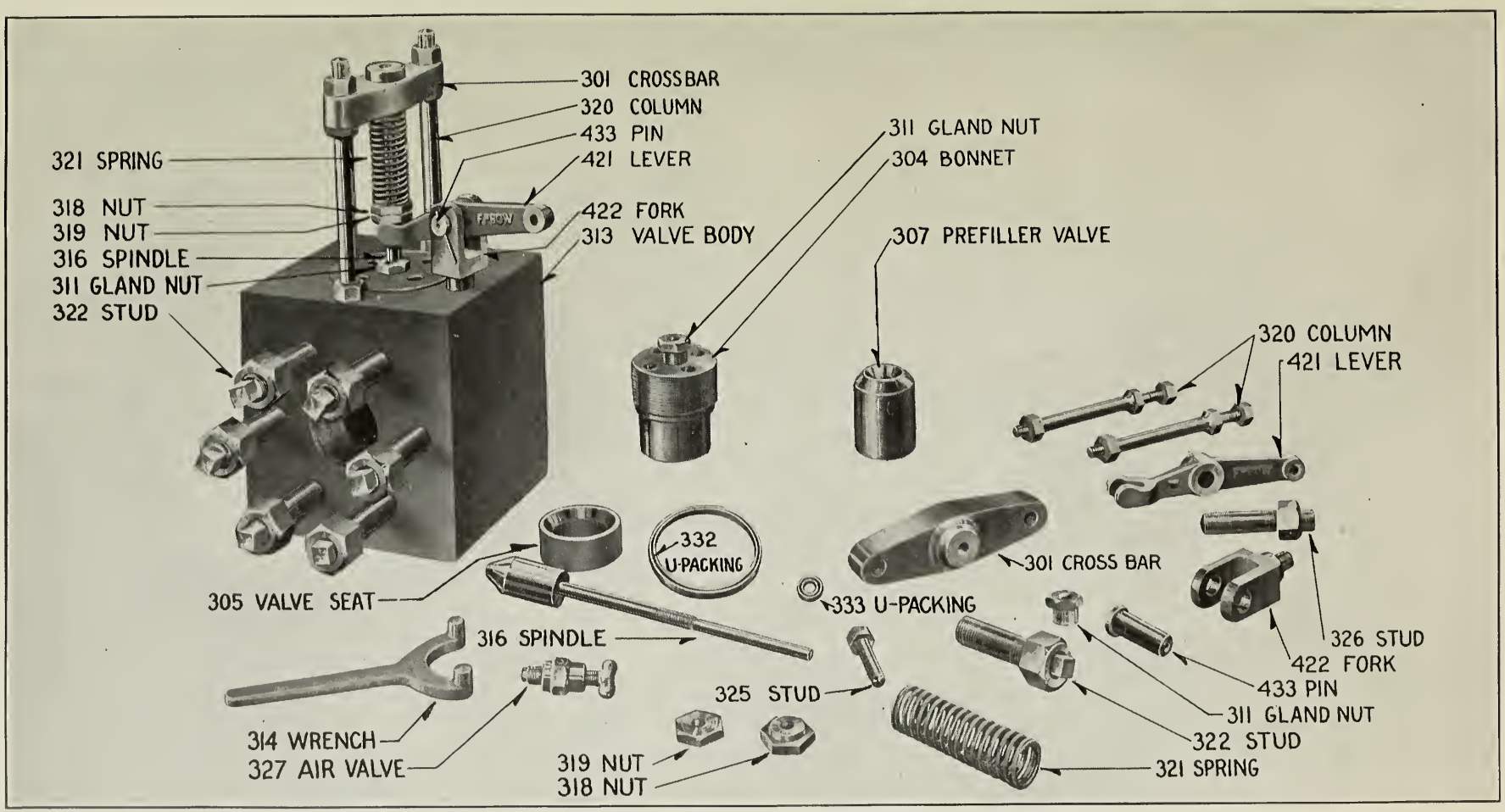
150 AND 300 TONS CAPACITY



Operating Gear for 150 ton single frame
United High-Speed Steam-Hydraulic Forging Press



Operating Gear for 300 ton single frame
United High-Speed Steam-Hydraulic Forging Press



Hydraulic working valve and details for 150 and 300 ton single frame
United High-Speed Steam-Hydraulic Forging Press

Instructions for Maintenance
—OF—
Steam-Hydraulic Forging Presses
FOUR COLUMN TYPE

All parts of OPERATING MECHANISM must be oiled regularly with engine oil to ensure smooth and easy operation without excessive wear.

The OIL PUMP must be kept well supplied with CLEAN cylinder oil.

The PRESS COLUMNS are best lubricated with "Hot-roll-neck" grease.

It is important that the water charged into the pre-filler tank be clean and free from grit, with the addition as often as necessary of a quantity of suitable HYDRAULIC LUBRICANT, such as soluble oil, cutting compound or other soapy solution free from acid.

Special attention must be paid to cleanliness and lubrication of the HYDRAULIC RAMS. Inattention to this matter will result in rapid destruction of the packing leathers. Care must be taken when removing or installing packings to avoid injuring the edges of the BRONZE RETAINING RINGS or the surface of the rams.

The COLUMN NUTS must be tightened up by turning a steam jet in the drilled holes in top and bottom of columns and tightening up nuts while columns are hot.

Columns of our later type having shoulders against which to tighten the base and entablature, are tightened by inserting a steam jet in the hollow ends of the columns and checking up the nuts while columns are hot.

If the column nuts are allowed to work loose, risk of breakage is run, due to the columns taking the load unequally.

Lock nuts on valve stems and adjustable rods should be kept tight. **Gland nuts on steam valve spindles** must be tightened no more than necessary to prevent leakage.

The nuts on the HYDRAULIC VALVE spindle must be 1/16" or more clear of the lever when the valve is seated. Keep all keys, bolts and nuts tight. REMEMBER that care and attention saves repairs and stoppages.

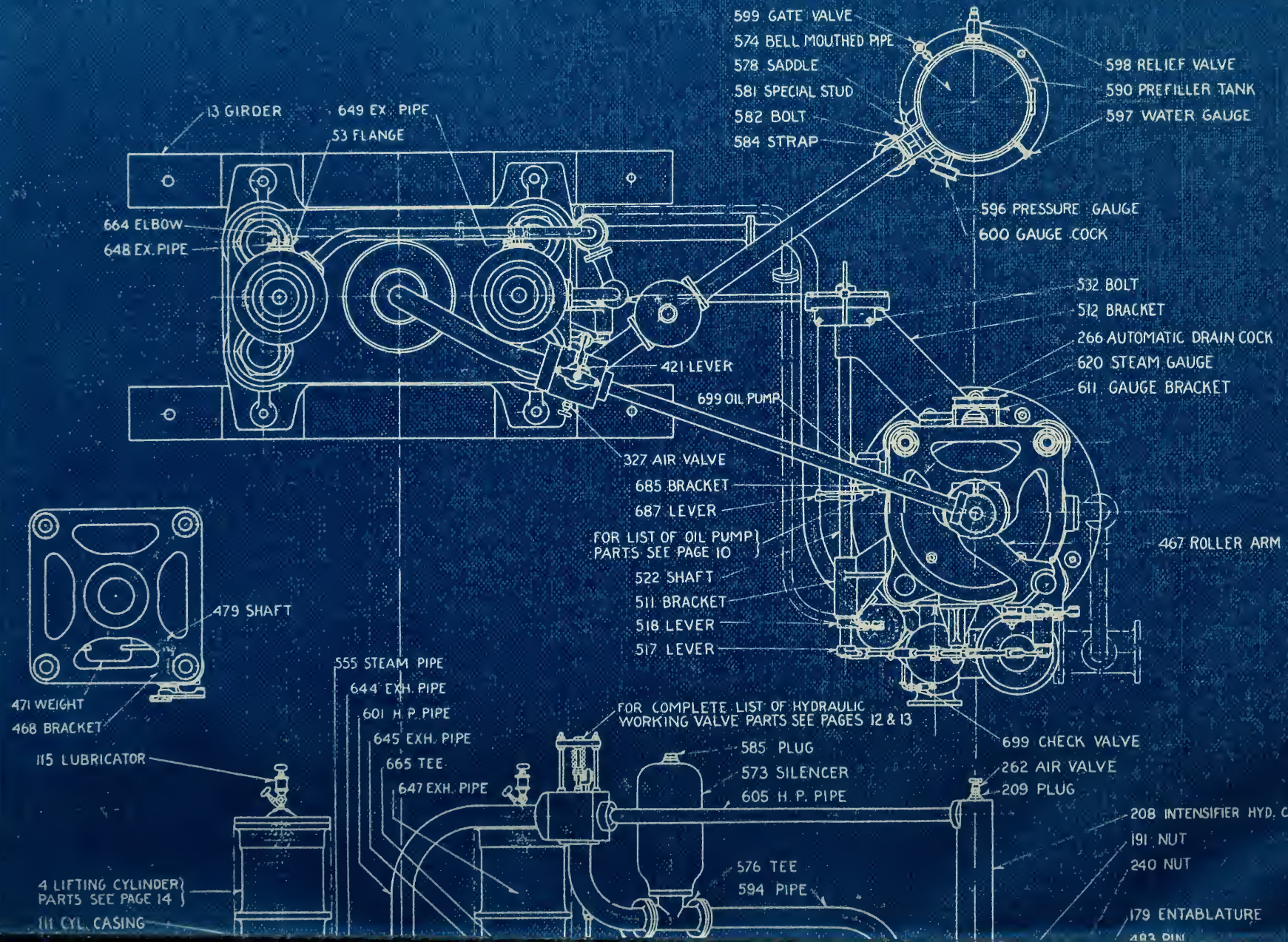
500 TO 800 TON 4 COLUMN TYPE

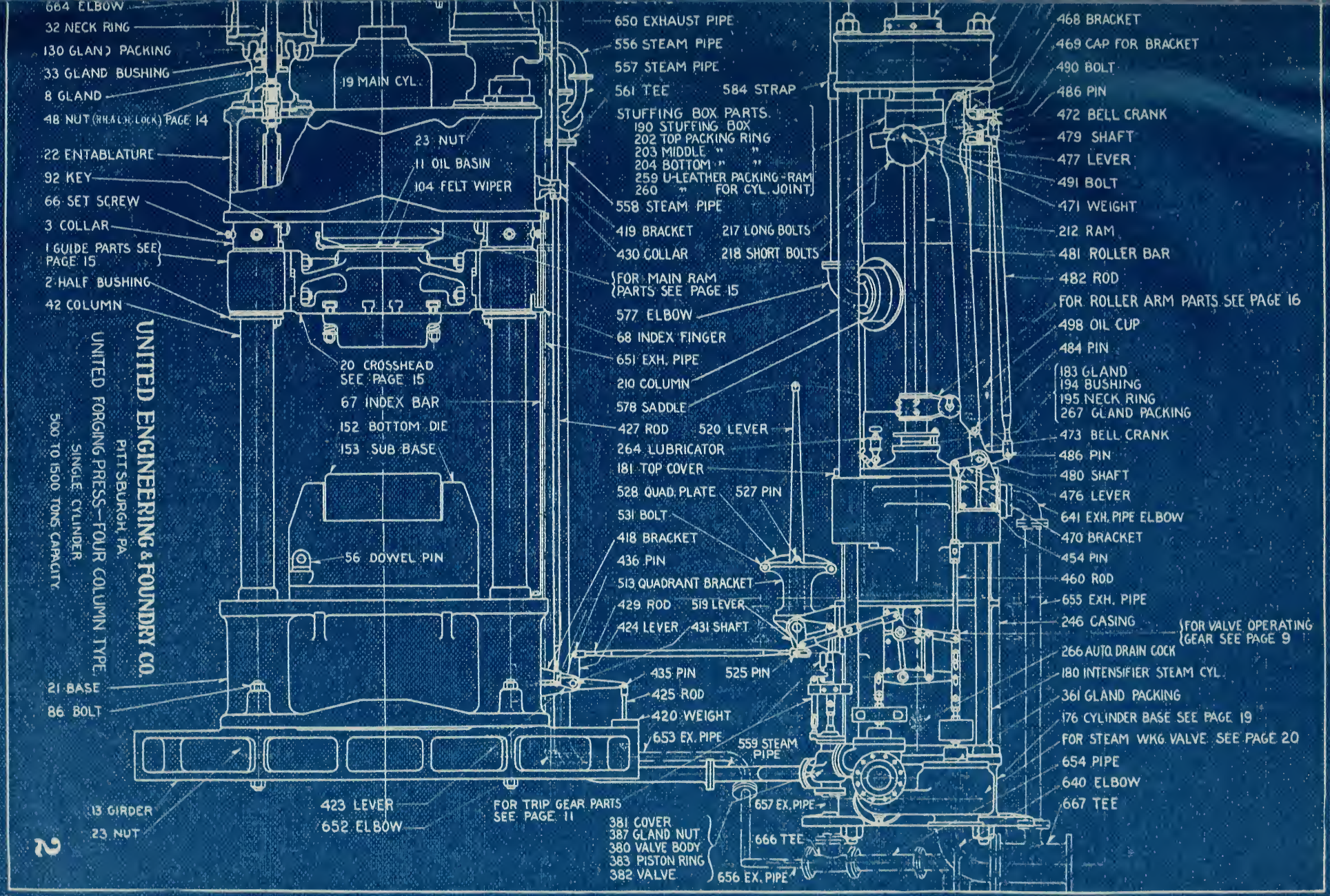
General Drawing .....Blue Print 2
Operating Gear.....page 9
Pump Arrangement and
Handling Gear .....page 10
Trip Gear .....page 11
Hydraulic Working Valve .....page 12
Lifting Cylinder Details .....page 14
Main Ram and Crosshead .....page 15
Roller Arm.....page 16
Intensifier Piston and Base.....page 19
Steam Working Valve.....page 20

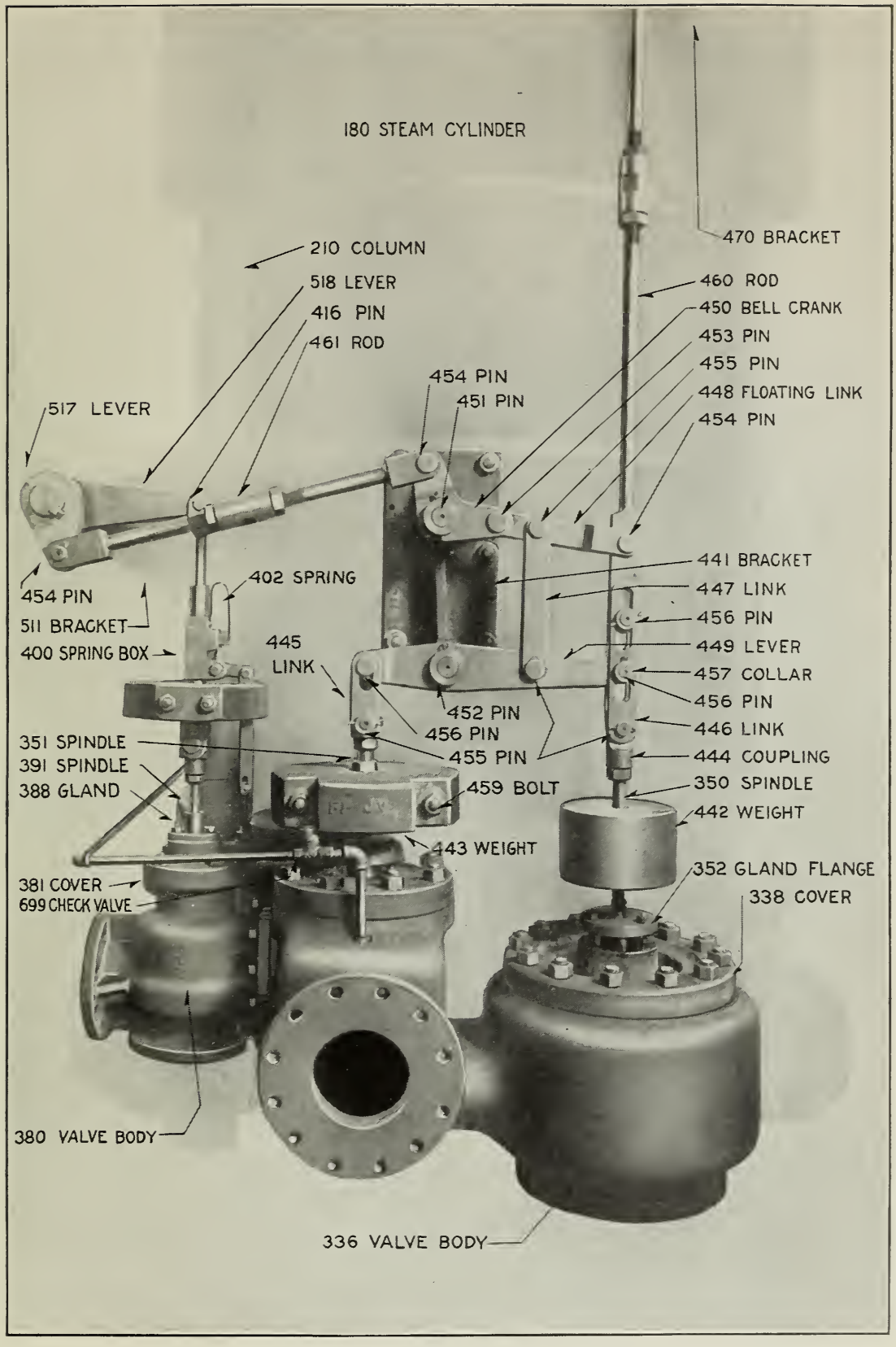
1000 TO 1500 TON 4 COLUMN TYPE

General Drawing .....Blue Print 2
Operating Gear.....page 9
Pump Arrangement and
Handling Gear .....page 10
Trip Gear.....page 11
Hydraulic Working Valve .....page 13
Lifting Cylinder Details .....page 14
Main Ram and Crosshead.....page 15
Roller Arm... .....page 16
Intensifier Piston and Base.....page 19
Steam Working Valve.....page 20

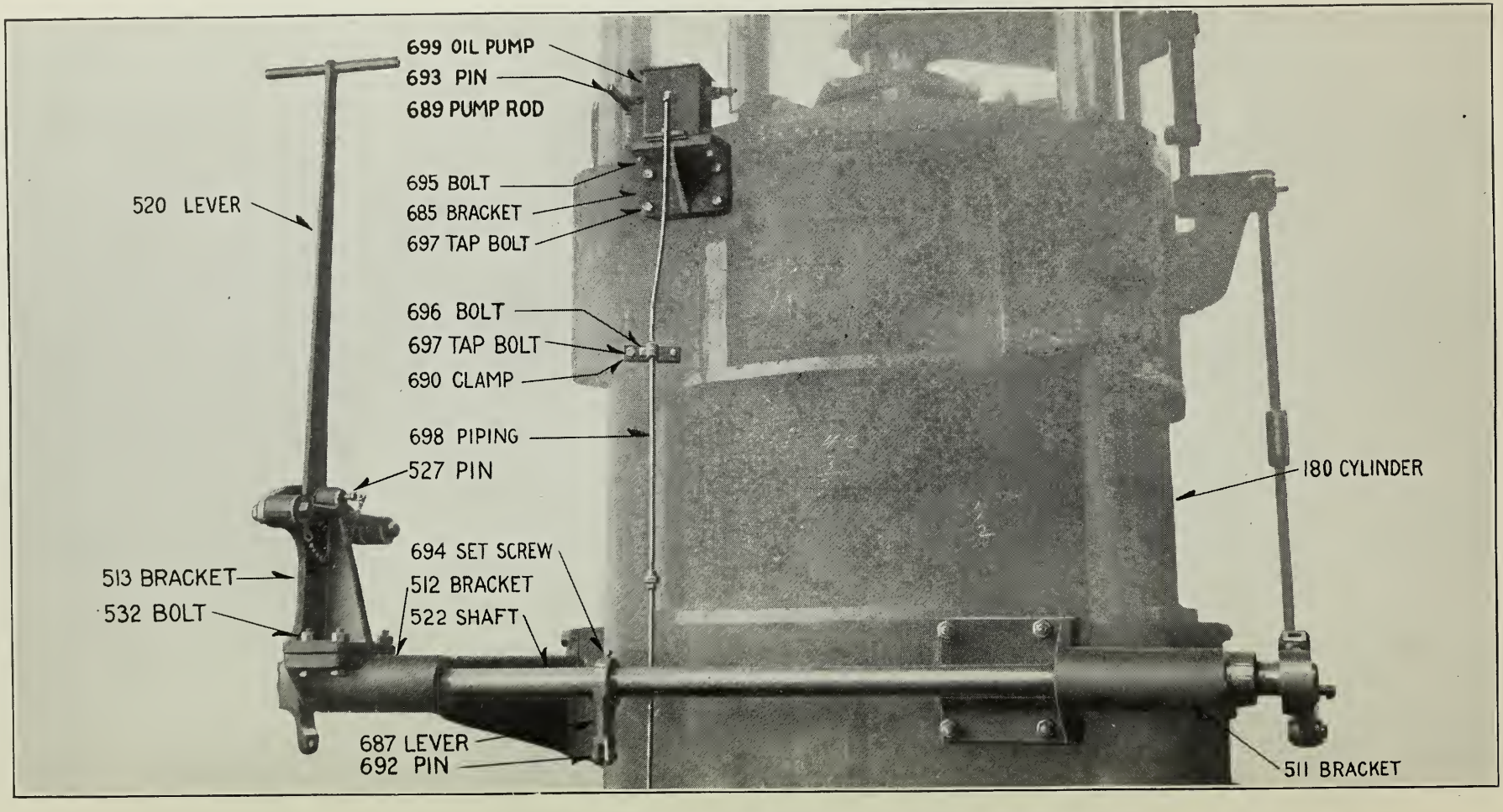
When ordering spare or repair parts, **do not neglect to give the press number for which parts are desired.** Press number on plate attached to hydraulic working valve.


599 GATE VALVE
574 BELL MOUTHED PIPE
578 SADDLE
581 SPECIAL STUD
582 BOLT
584 STRAP
598 RELIEF VALVE
590 PREFILLER TANK
597 WATER GAUGE
13 GIRDER
649 EX. PIPE
53 FLANGE
664 ELBOW
648 EX. PIPE
596 PRESSURE GAUGE
600 GAUGE COCK
532 BOLT
512 BRACKET
266 AUTOMATIC DRAIN COCK
620 STEAM GAUGE
611 GAUGE BRACKET
421 LEVER
699 OIL PUMP
327 AIR VALVE
685 BRACKET
687 LEVER
FOR LIST OF OIL PUMP PARTS SEE PAGE 10
522 SHAFT
511 BRACKET
518 LEVER
517 LEVER
467 ROLLER ARM
479 SHAFT
471 WEIGHT
468 BRACKET
555 STEAM PIPE
644 EXH. PIPE
601 H.P. PIPE
645 EXH. PIPE
665 TEE
647 EXH. PIPE
115 LUBRICATOR
FOR COMPLETE LIST OF HYDRAULIC WORKING VALVE PARTS SEE PAGES 12 & 13
585 PLUG
573 SILENCER
605 H.P. PIPE
699 CHECK VALVE
262 AIR VALVE
209 PLUG
208 INTENSIFIER HYD. CYL.
191 NUT
240 NUT
576 TEE
594 PIPE
4 LIFTING CYLINDER PARTS SEE PAGE 14
111 CYL. CASING
179 ENTABLATURE
483 PIN

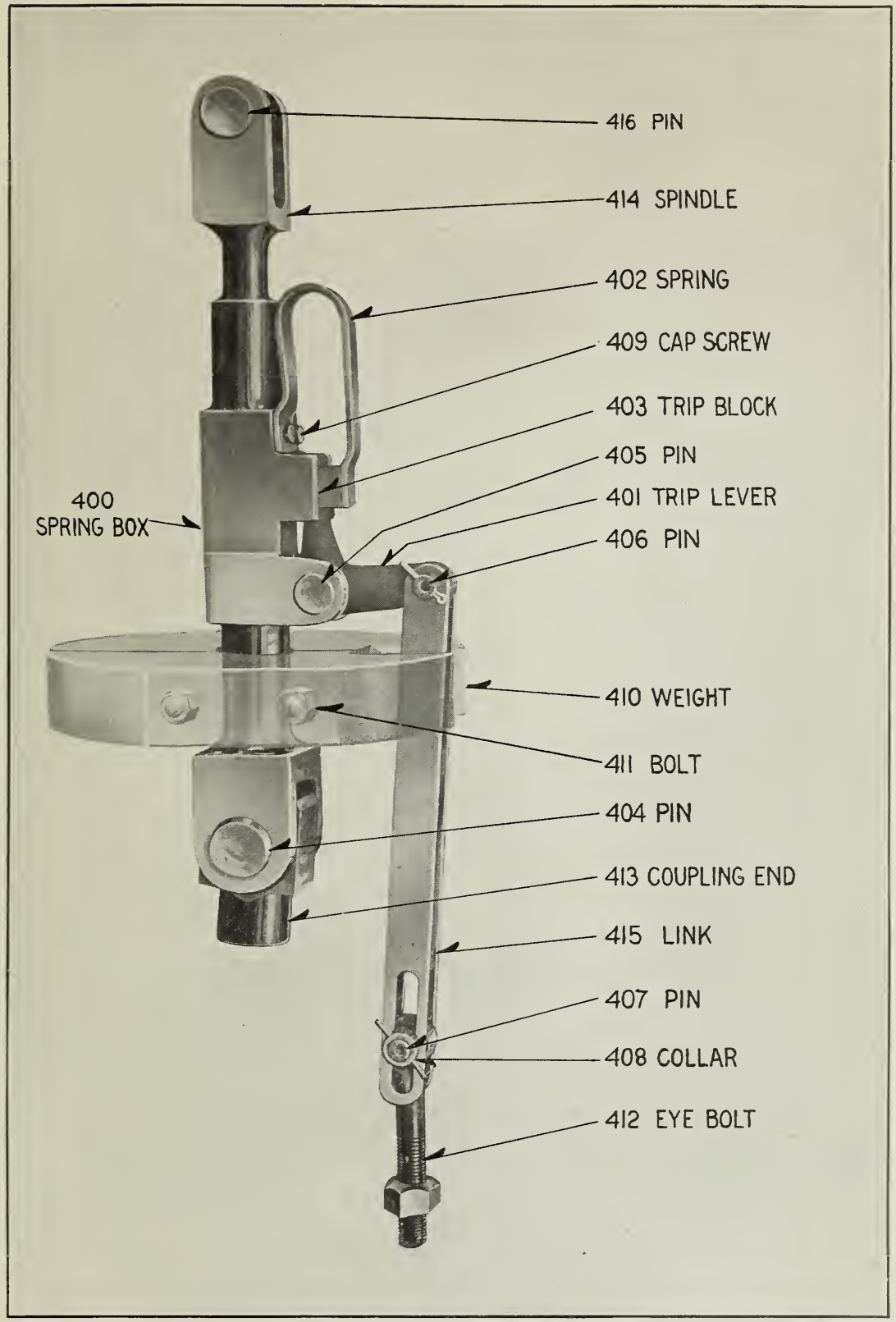

664 ELBOW
32 NECK RING
130 GLAND PACKING
33 GLAND BUSHING
8 GLAND
48 NUT (RH & LH LOCK) PAGE 14
22 ENTABLATURE
92 KEY
66 SET SCREW
3 COLLAR
1 GUIDE PARTS SEE PAGE 15
2 HALF BUSHING
42 COLUMN
19 MAIN CYL.
23 NUT
11 OIL BASIN
104 FELT WIPER
20 CROSSHEAD SEE PAGE 15
67 INDEX BAR
152 BOTTOM DIE
153 SUB BASE
56 DOWEL PIN
21 BASE
86 BOLT
13 GIRDER
23 NUT
423 LEVER
652 ELBOW
FOR TRIP GEAR PARTS SEE PAGE 11
381 COVER
387 GLAND NUT
380 VALVE BODY
383 PISTON RING
382 VALVE
656 EX. PIPE
657 EX. PIPE
666 TEE
650 EXHAUST PIPE
556 STEAM PIPE
557 STEAM PIPE
561 TEE
584 STRAP
STUFFING BOX PARTS
190 STUFFING BOX
202 TOP PACKING RING
203 MIDDLE " "
204 BOTTOM " "
259 U-LEATHER PACKING-RAM
260 " FOR CYL. JOINT
558 STEAM PIPE
419 BRACKET
217 LONG BOLTS
430 COLLAR
218 SHORT BOLTS
FOR MAIN RAM PARTS SEE PAGE 15
577 ELBOW
68 INDEX FINGER
651 EXH. PIPE
210 COLUMN
578 SADDLE
427 ROD
520 LEVER
264 LUBRICATOR
181 TOP COVER
528 QUAD. PLATE
527 PIN
531 BOLT
418 BRACKET
436 PIN
513 QUADRANT BRACKET
429 ROD
519 LEVER
424 LEVER
431 SHAFT
435 PIN
525 PIN
425 ROD
420 WEIGHT
653 EX. PIPE
559 STEAM PIPE
468 BRACKET
469 CAP FOR BRACKET
490 BOLT
486 PIN
472 BELL CRANK
479 SHAFT
477 LEVER
491 BOLT
471 WEIGHT
212 RAM
481 ROLLER BAR
482 ROD
FOR ROLLER ARM PARTS SEE PAGE 16
498 OIL CUP
484 PIN
183 GLAND
194 BUSHING
195 NECK RING
267 GLAND PACKING
473 BELL CRANK
486 PIN
480 SHAFT
476 LEVER
641 EXH. PIPE ELBOW
470 BRACKET
454 PIN
460 ROD
655 EXH. PIPE
246 CASING
FOR VALVE OPERATING GEAR SEE PAGE 9
266 AUTO. DRAIN COCK
180 INTENSIFIER STEAM CYL.
361 GLAND PACKING
176 CYLINDER BASE SEE PAGE 19
FOR STEAM WKG. VALVE SEE PAGE 20
654 PIPE
640 ELBOW
667 TEE
UNITED ENGINEERING & FOUNDRY CO.
PITTSBURGH, PA.
UNITED FORGING PRESS—FOUR COLUMN TYPE.
SINGLE CYLINDER
500 TO 1500 TONS CAPACITY.



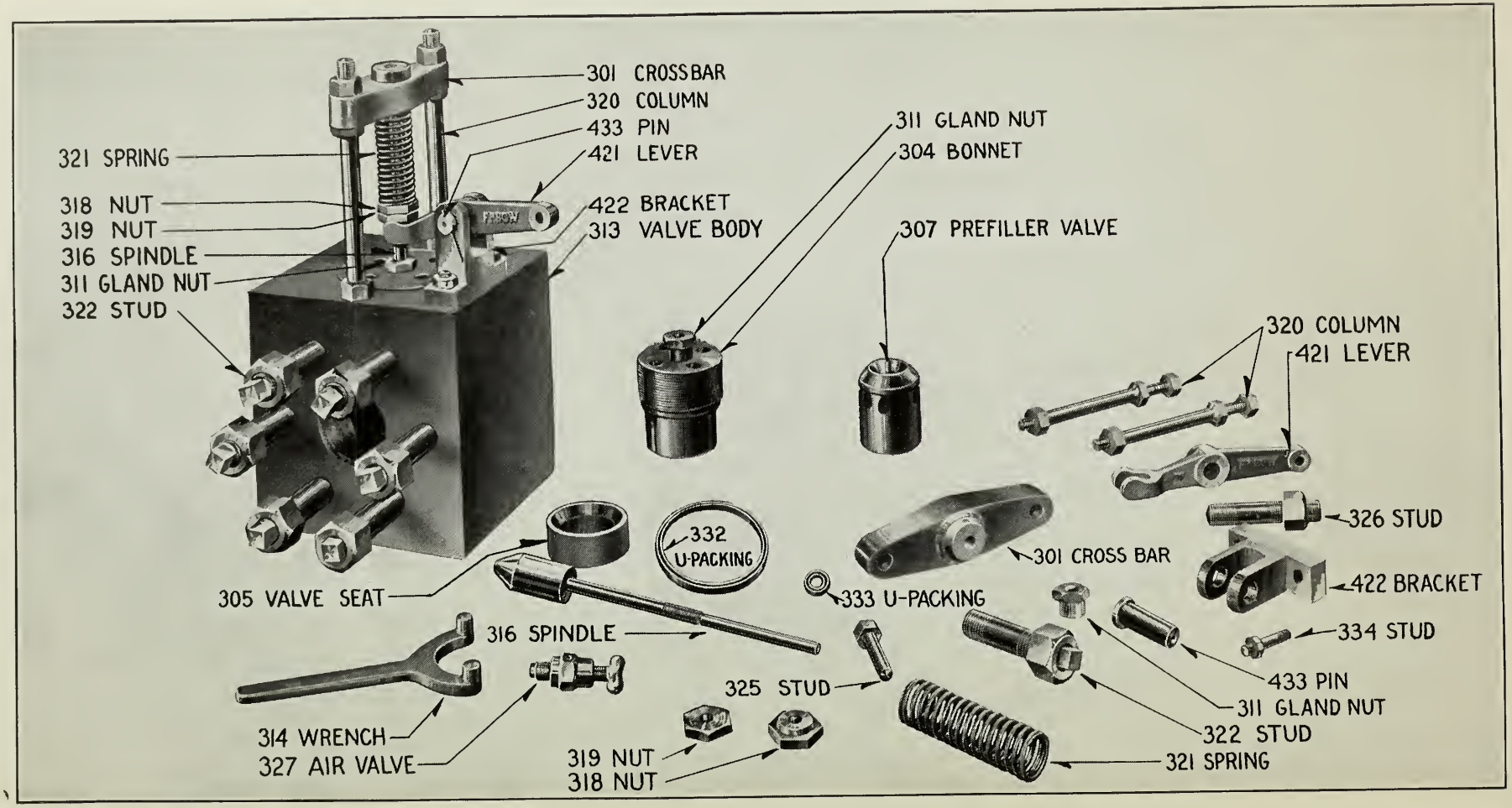
Operating Gear for United High-Speed Steam-Hydraulic Forging Press, 500 to 2000 tons capacity, four column type



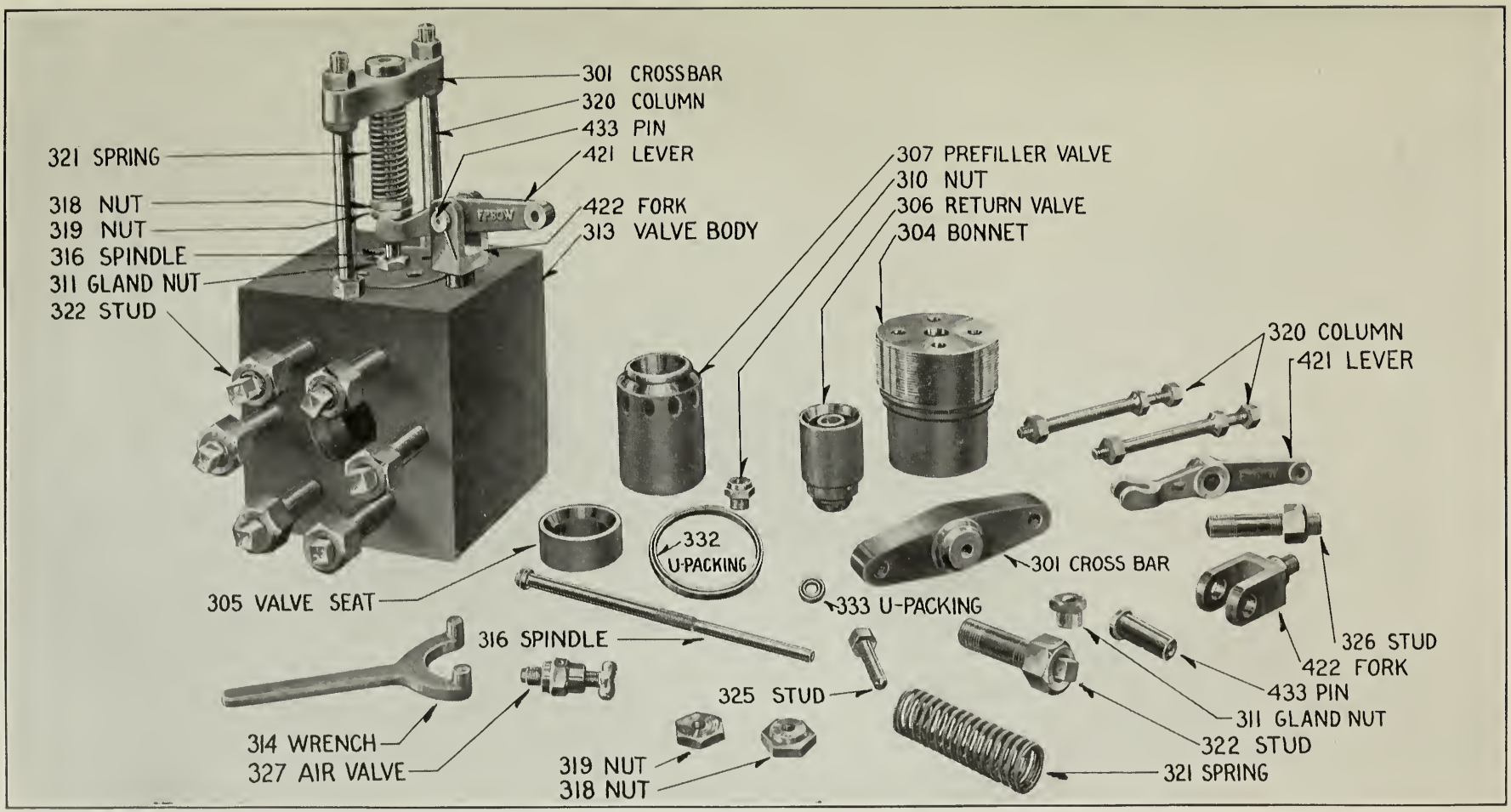
Oil pump arrangement and handling gear for United High-Speed Steam-Hydraulic Forging Press. 500 to 2000 tons capacity. Four column type.



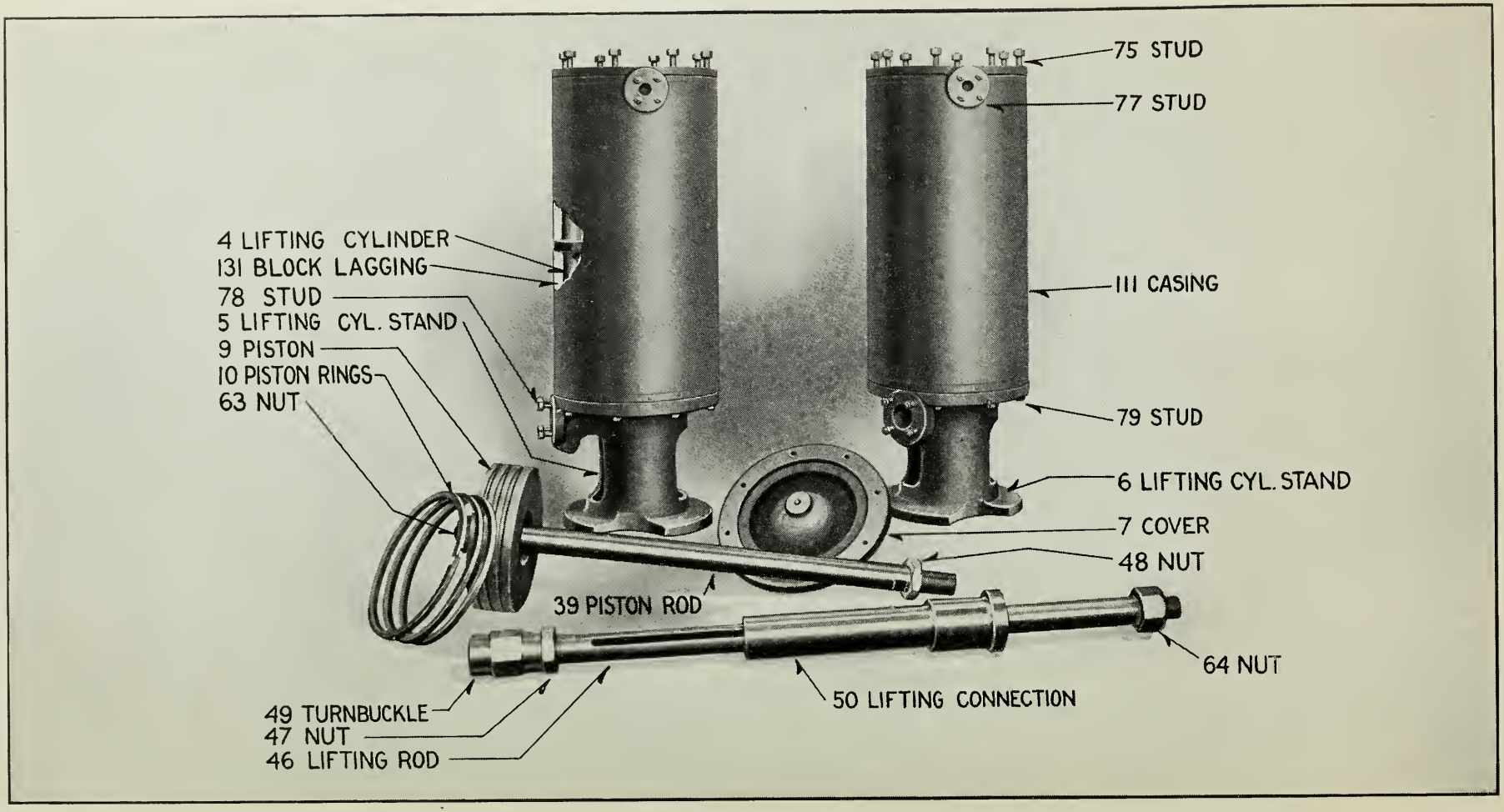
Trip Gear for United High-Speed Steam-Hydraulic Forging Press. 150 to 2000 tons capacity, used on all types.



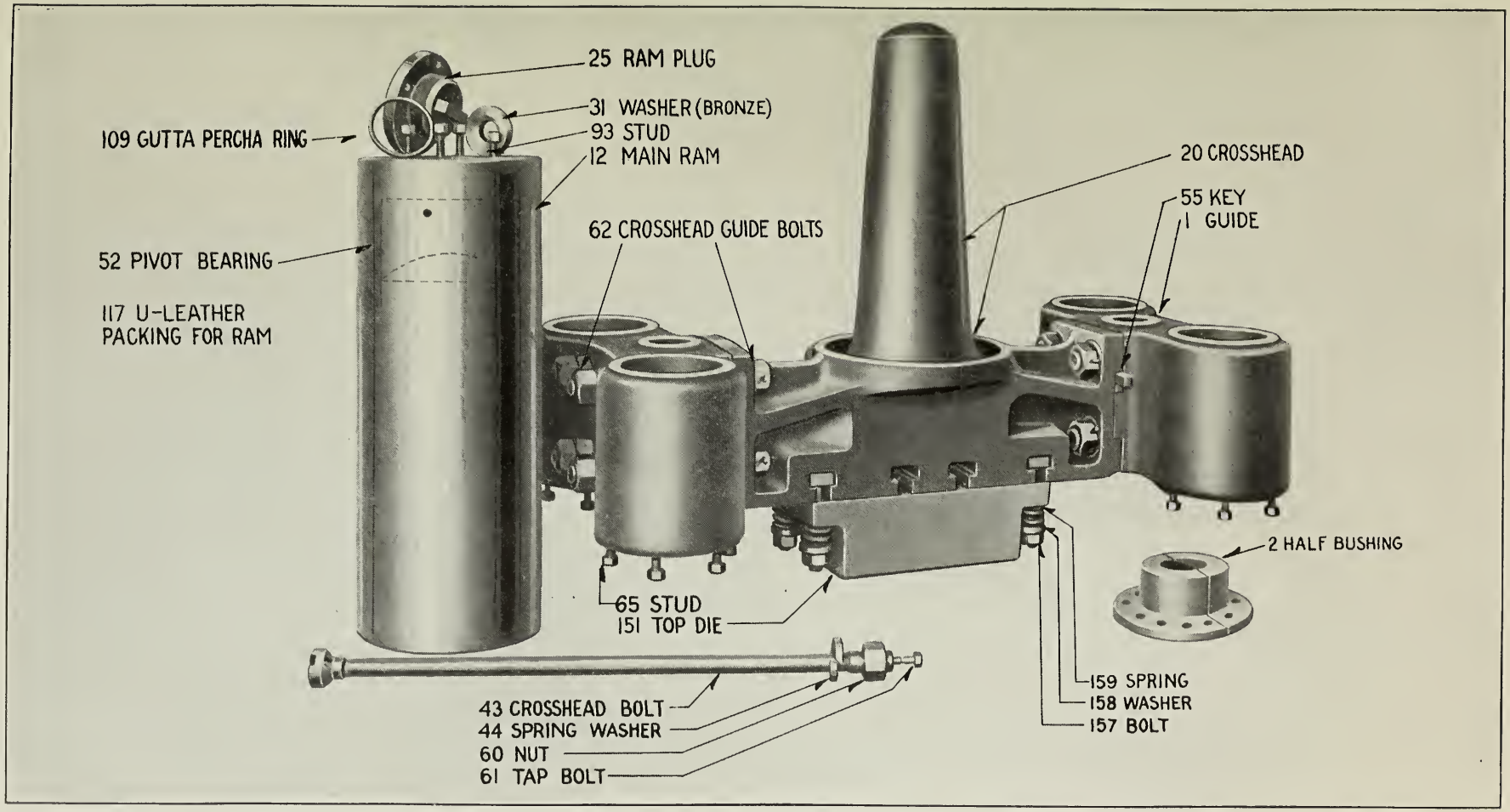
Hydraulic Working Valve and details for United High-Speed Steam-Hydraulic Forging Press. 500 to 800 tons capacity. Four column type.



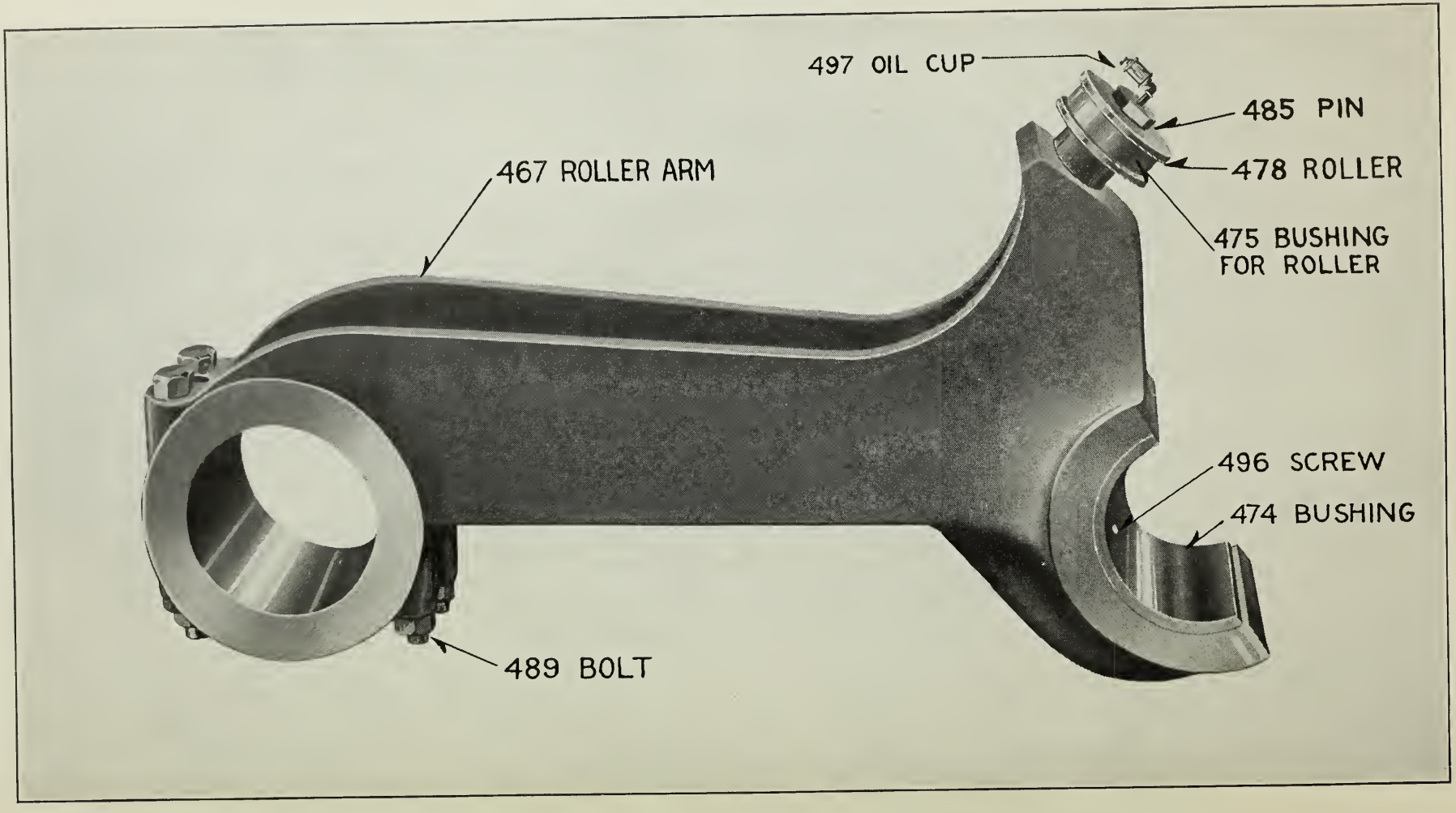
Hydraulic Working Valve and details for United High-Speed Steam-Hydraulic Forging Press 1000 to 1500 tons capacity. Four column type.



Lifting Cylinder and details for United High-Speed Steam-Hydraulic Forging Press
500 to 1500 tons capacity. Four column type.



Main Ram, details and crosshead for United High-Speed Steam-Hydraulic Forging Press 300 to 1500 tons capacity. Four column type.

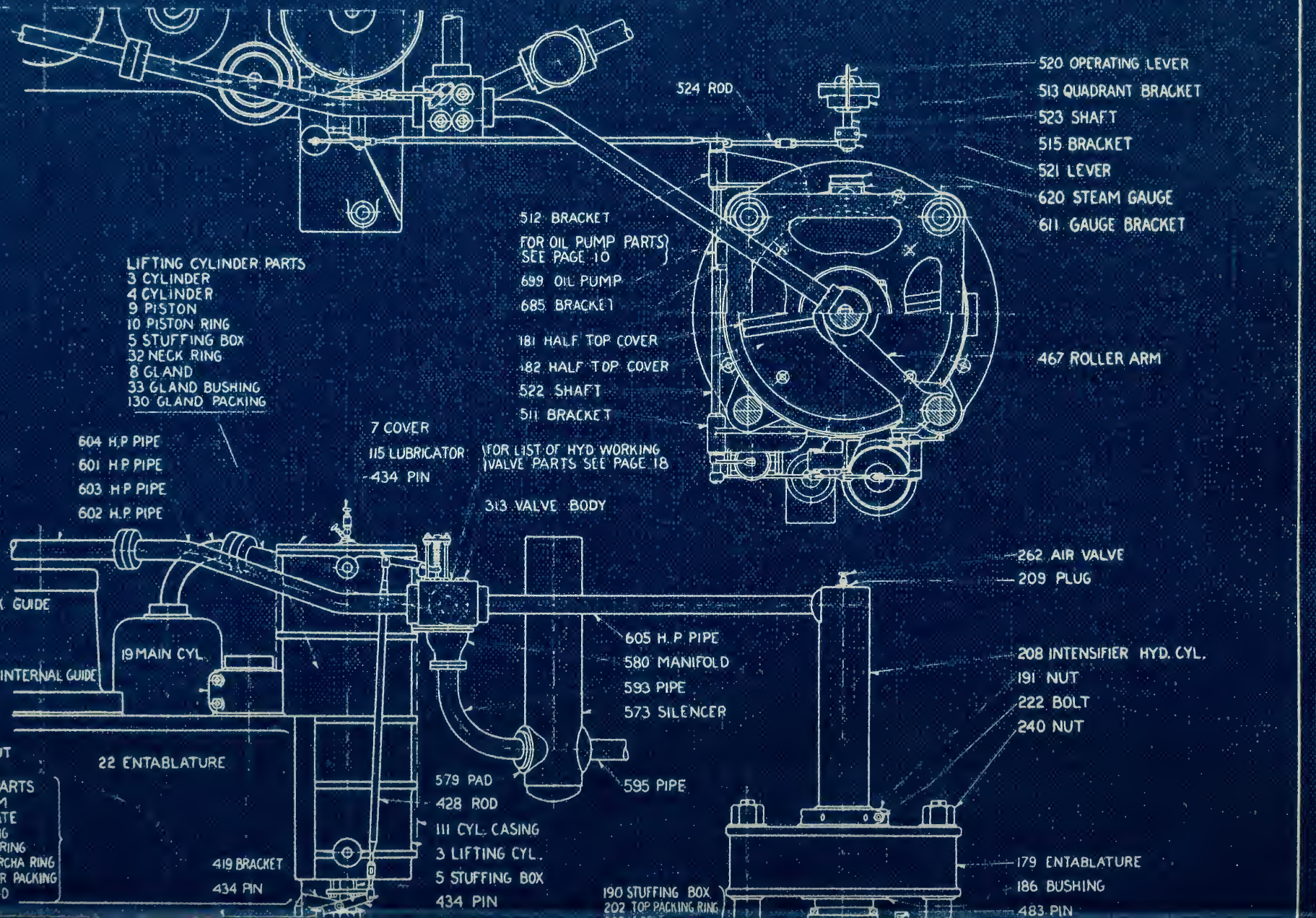


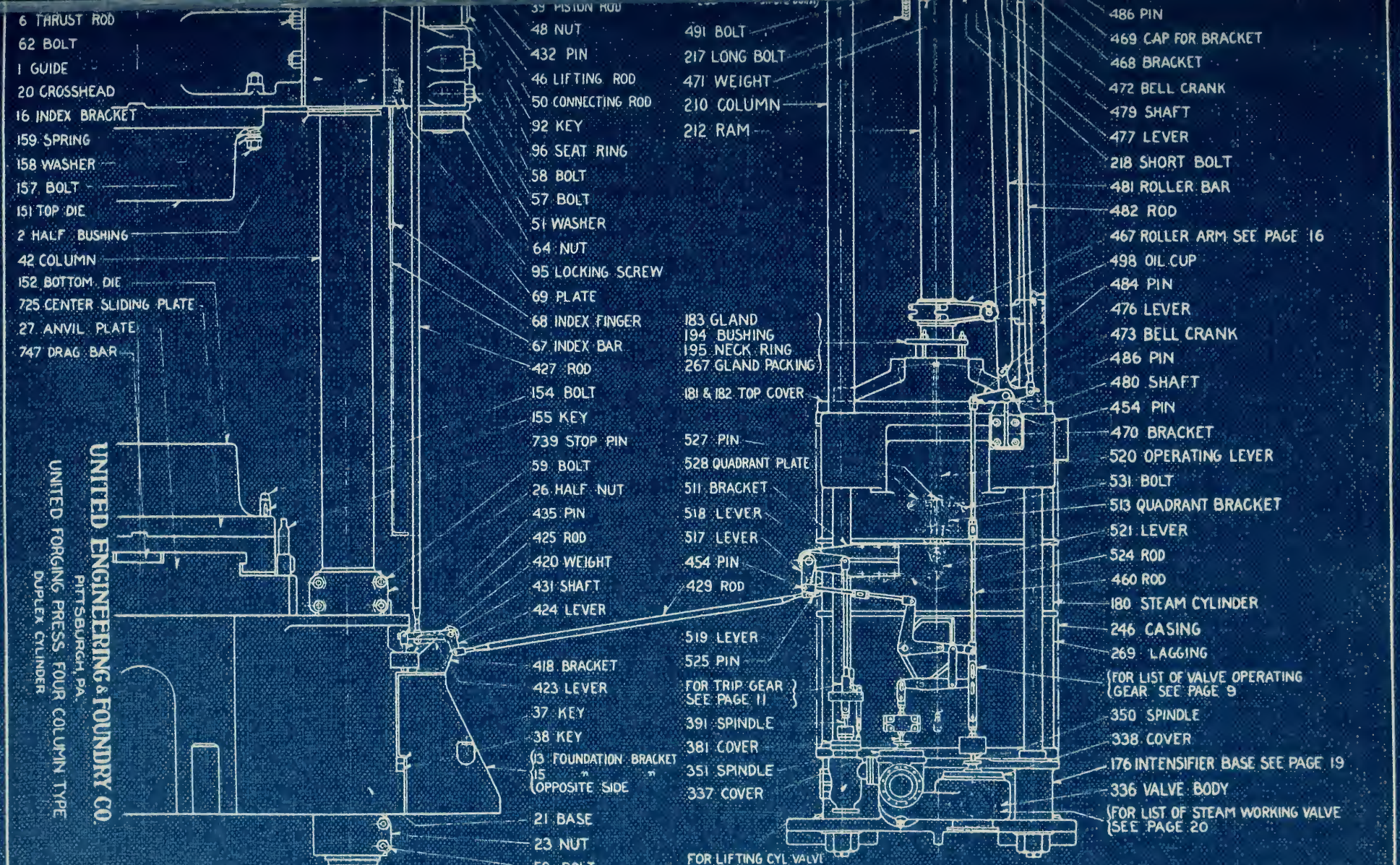
Roller Arm for United High-Speed Steam-Hydraulic Forging Press
150 to 2000 tons capacity. Used on all types.

2000 TON 4 COLUMN TYPE
DUPLEX CYLINDER

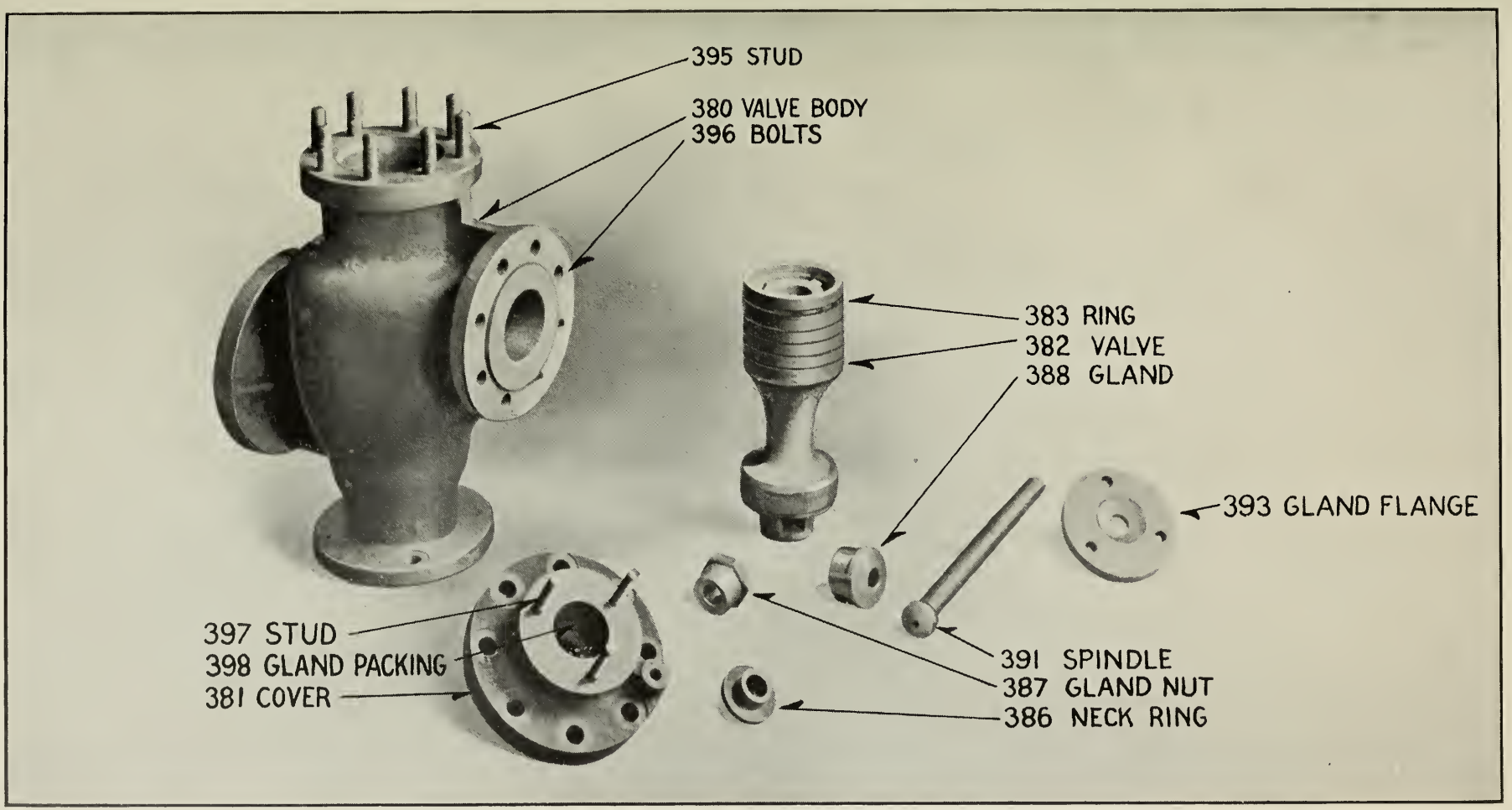
General Drawing .....Blue Print 3
Operating Valve Gear.....page 9
Oil Pump and Handling Gear.....page 10
Trip Gear .....page 11
Roller Arm.....page 16
Lifting Cylinder Valve.....page 17
Hydraulic Working Valve .....page 18
Intensifier Piston and Base.....page 19
Steam Working Valve.....page 20

When ordering spare or repair parts, **do not neglect to give press number for which parts are desired.** Press number on plate attached to hydraulic working valve.

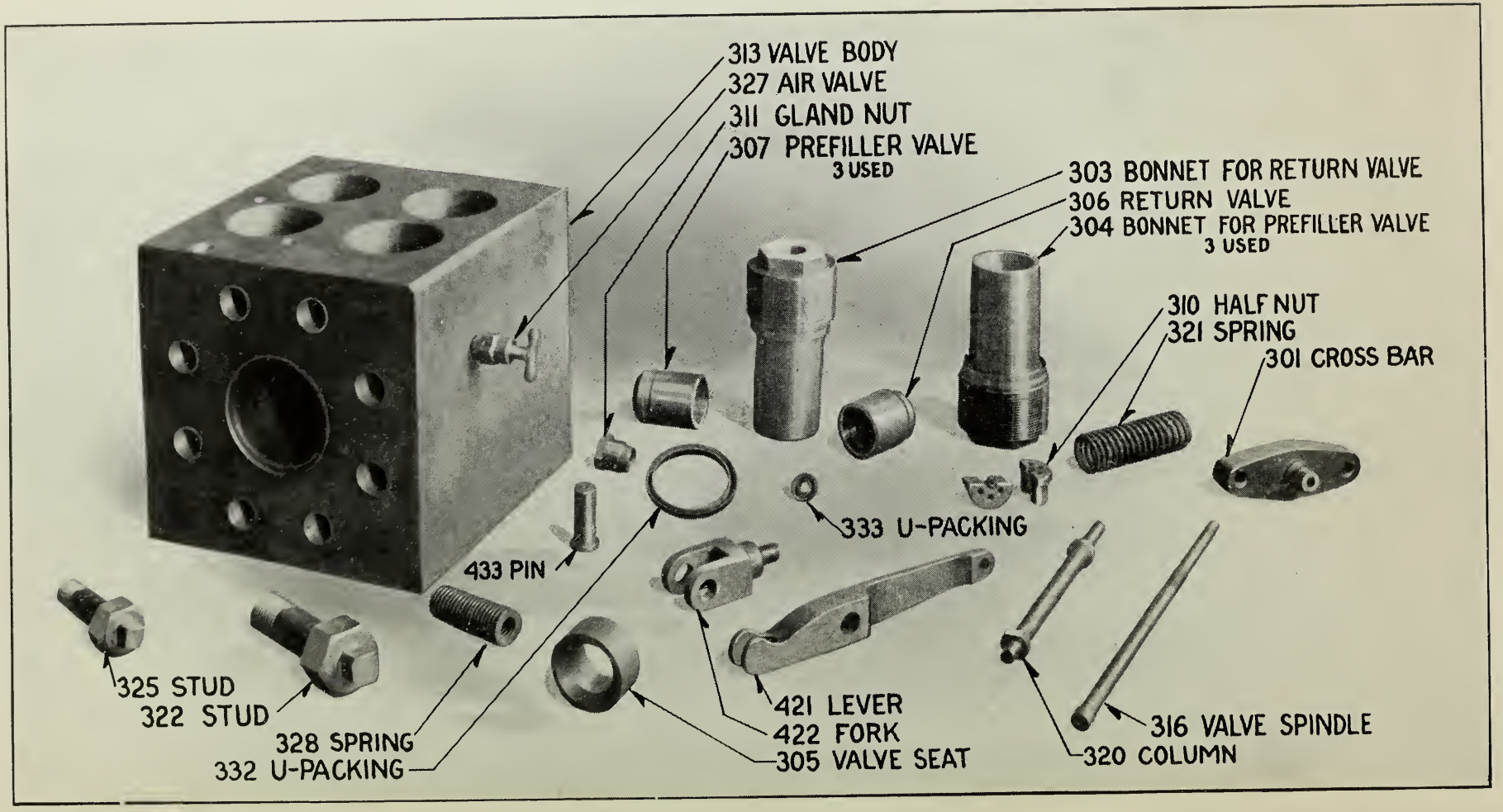

524 ROD
520 OPERATING LEVER
513 QUADRANT BRACKET
523 SHAFT
515 BRACKET
521 LEVER
620 STEAM GAUGE
611 GAUGE BRACKET
512 BRACKET
FOR OIL PUMP PARTS SEE PAGE 10
699 OIL PUMP
685 BRACKET
181 HALF TOP COVER
182 HALF TOP COVER
522 SHAFT
511 BRACKET
467 ROLLER ARM
LIFTING CYLINDER PARTS
3 CYLINDER
4 CYLINDER
9 PISTON
10 PISTON RING
5 STUFFING BOX
32 NECK RING
8 GLAND
33 GLAND BUSHING
130 GLAND PACKING
7 COVER
115 LUBRICATOR
434 PIN
FOR LIST OF HYD WORKING VALVE PARTS SEE PAGE 18
313 VALVE BODY
604 H.P PIPE
601 H.P PIPE
603 H.P PIPE
602 H.P PIPE
262 AIR VALVE
209 PLUG
18 TOP STALK GUIDE
23 NUT
17 BOTTOM INTERNAL GUIDE
19 MAIN CYL.
605 H. P PIPE
580 MANIFOLD
593 PIPE
573 SILENCER
208 INTENSIFIER HYD. CYL.
191 NUT
222 BOLT
240 NUT
26 HALF NUT
22 ENTABLATURE
MAIN RAM PARTS
12 MAIN RAM
25 COVER PLATE
29 MOUTH RING
30 FLOATING RING
109 GUTTA PERCHA RING
117 U-LEATHER PACKING
52 RAM PAD
419 BRACKET
434 PIN
579 PAD
428 ROD
111 CYL. CASING
3 LIFTING CYL.
5 STUFFING BOX
434 PIN
595 PIPE
190 STUFFING BOX
202 TOP PACKING RING
179 ENTABLATURE
186 BUSHING
483 PIN



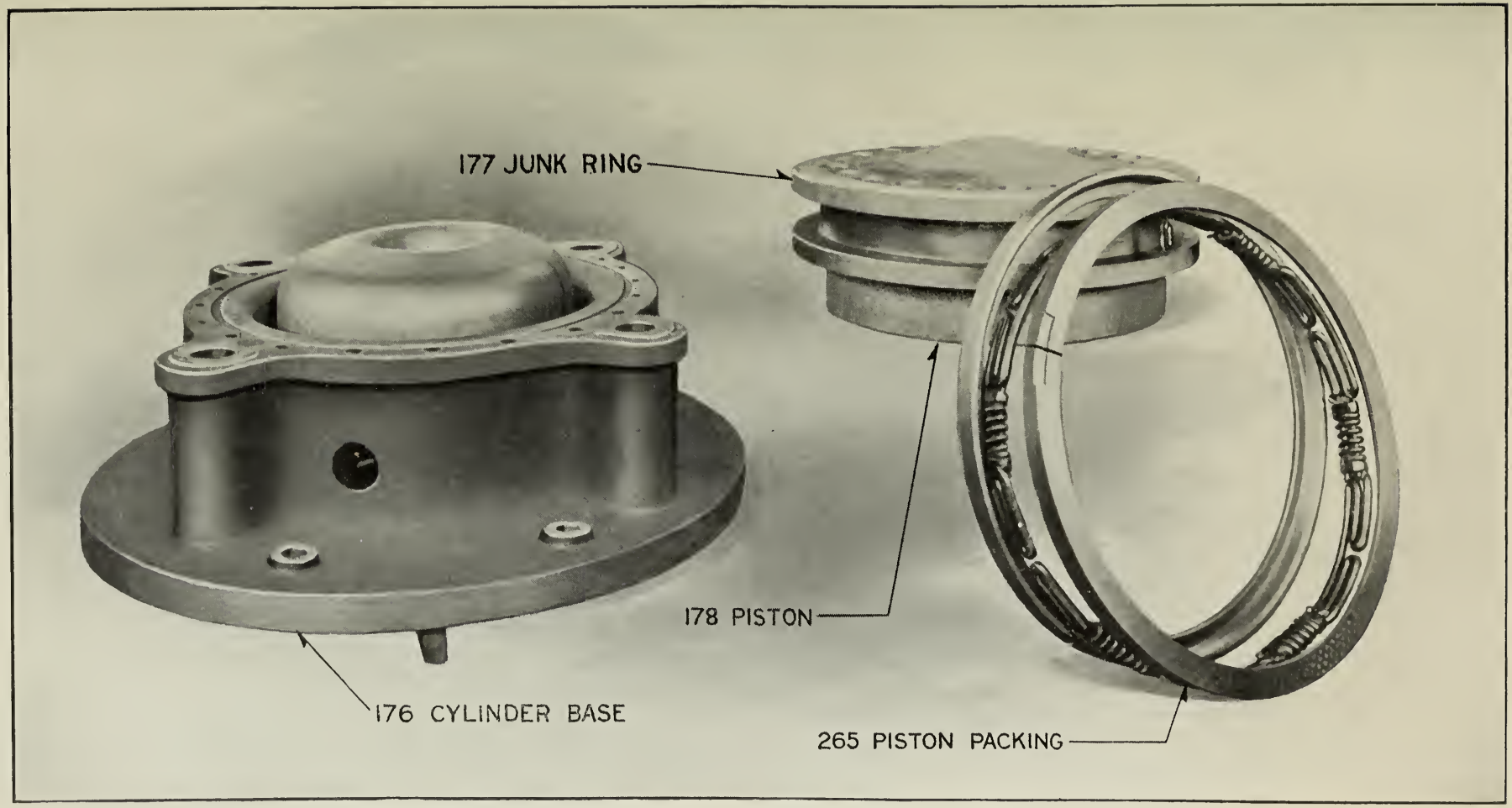
UNITED ENGINEERING & FOUNDRY CO.
PITTSBURGH, PA.
UNITED FORGING PRESS. FOUR COLUMN TYPE
DUPLEX CYLINDER



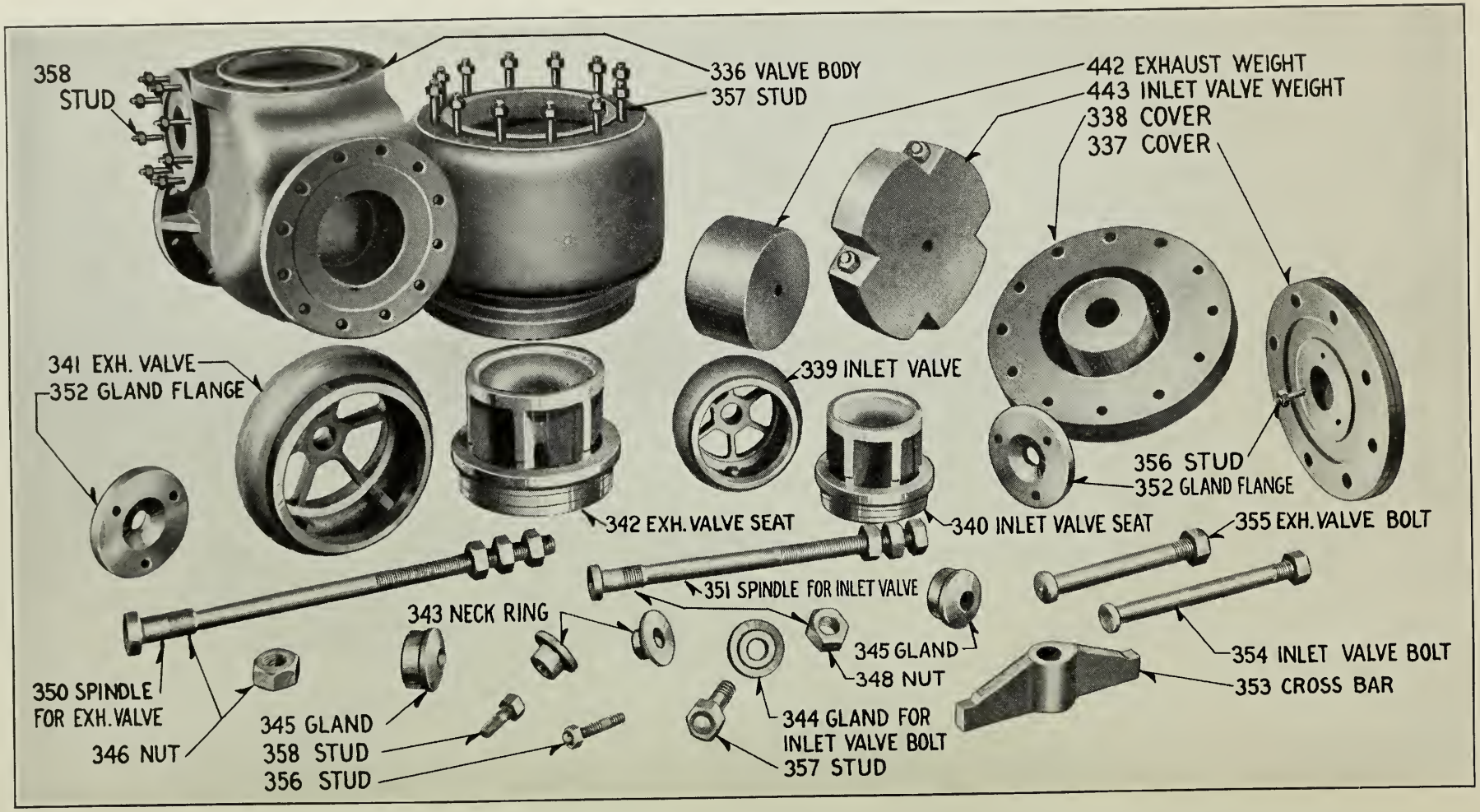
Lifting Cylinder Valve details for United High-Speed Steam-Hydraulic Forging Press. 2000 tons capacity. Four column type, duplex cylinder.



Hydraulic Working Valve details for United High-Speed Steam-Hydraulic Forging Press. 2000 tons capacity. Four column type, duplex cylinder.

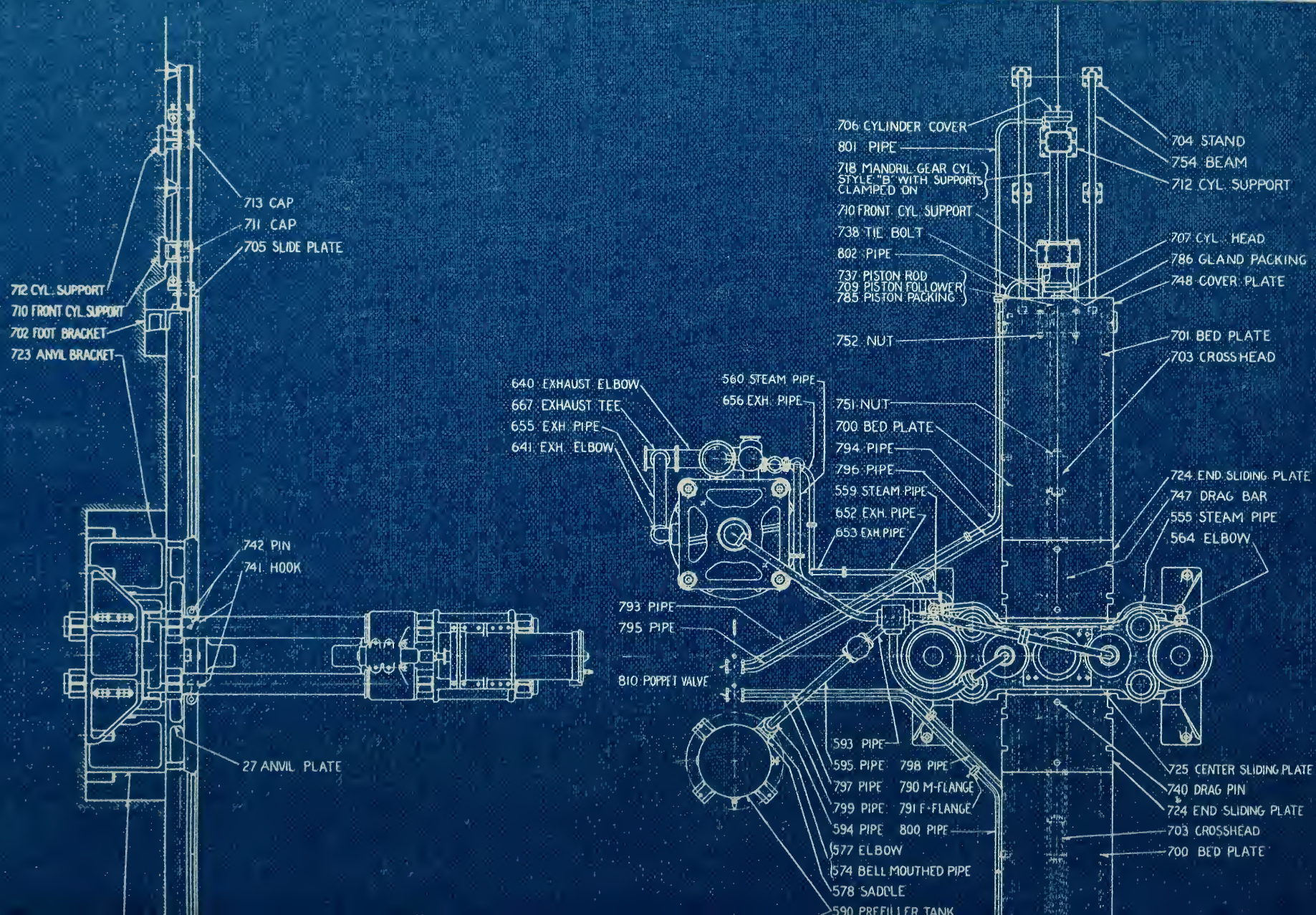


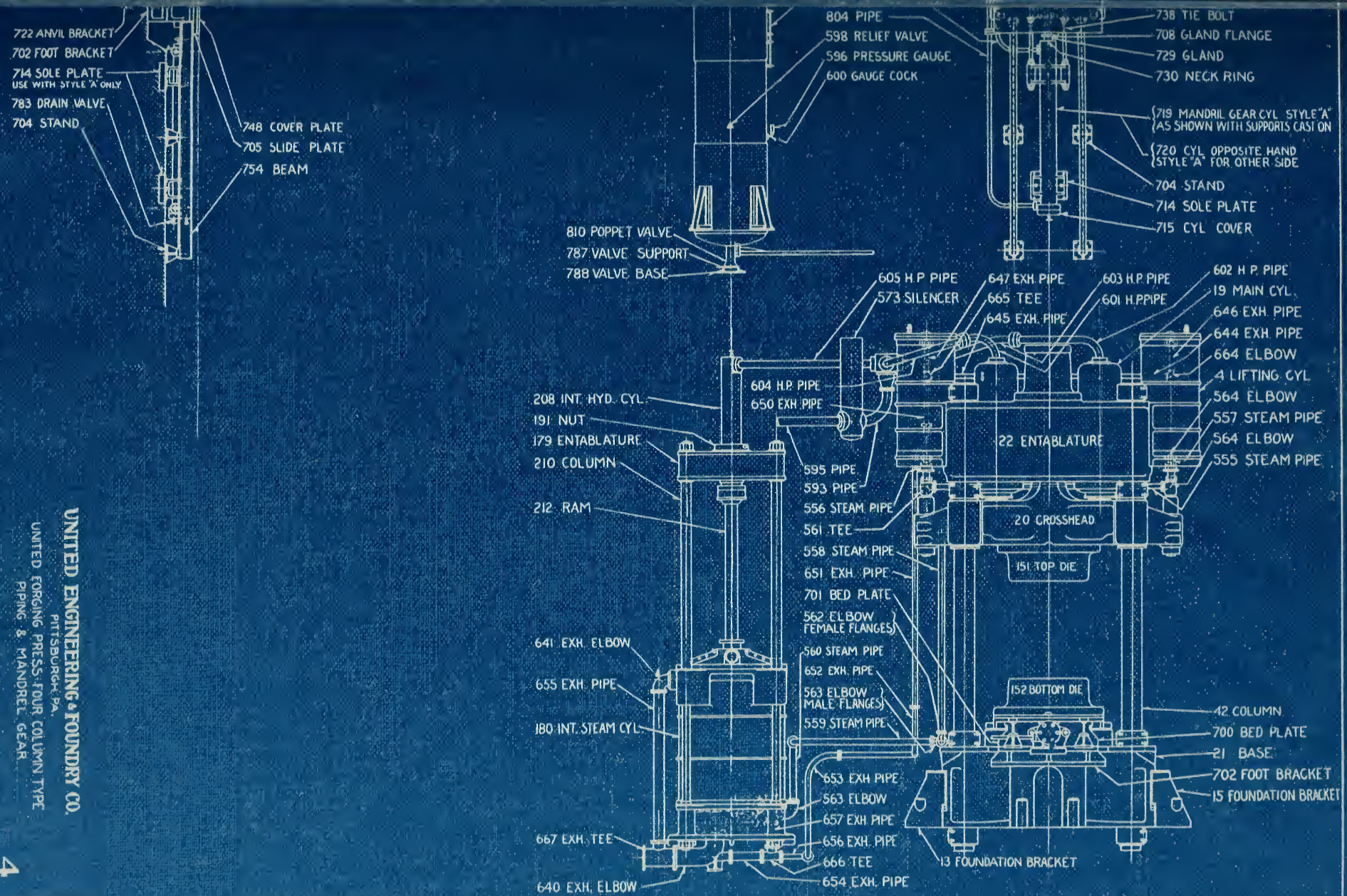
Intensifier Piston and Base for United High-Speed Steam-Hydraulic Forging Press.
300 to 2000 tons capacity. Used on all four column presses.



Steam Working Valve details for United High-Speed Steam-Hydraulic Forging Press.
150 to 2000 tons capacity. Used on all presses.

When ordering spare or repair parts, **do not neglect to give press number for which parts are desired.** Press number on plate attached to hydraulic working valve.


713 CAP
711 CAP
705 SLIDE PLATE
712 CYL. SUPPORT
710 FRONT CYL. SUPPORT
702 FOOT BRACKET
723 ANVIL BRACKET
742 PIN
741 HOOK
27 ANVIL PLATE
706 CYLINDER COVER
801 PIPE
718 MANDRIL GEAR CYL. STYLE "B" WITH SUPPORTS CLAMPED ON
710 FRONT CYL. SUPPORT
738 TIE BOLT
802 PIPE
737 PISTON ROD
709 PISTON FOLLOWER
785 PISTON PACKING
752 NUT
704 STAND
754 BEAM
712 CYL. SUPPORT
707 CYL. HEAD
786 GLAND PACKING
748 COVER PLATE
701 BED PLATE
703 CROSSHEAD
640 EXHAUST ELBOW
667 EXHAUST TEE
655 EXH. PIPE
641 EXH. ELBOW
560 STEAM PIPE
656 EXH. PIPE
751 NUT
700 BED PLATE
794 PIPE
796 PIPE
559 STEAM PIPE
652 EXH. PIPE
653 EXH. PIPE
724 END SLIDING PLATE
747 DRAG BAR
555 STEAM PIPE
564 ELBOW
793 PIPE
795 PIPE
810 POPPET VALVE
593 PIPE
595 PIPE
798 PIPE
797 PIPE
790 M-FLANGE
799 PIPE
791 F-FLANGE
594 PIPE
800 PIPE
577 ELBOW
574 BELL MOUTHED PIPE
578 SADDLE
590 PREFILLER TANK
725 CENTER SLIDING PLATE
740 DRAG PIN
724 END SLIDING PLATE
703 CROSSHEAD
700 BED PLATE



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